

ITWAA HOME COMPUTING

Dec. 16, 1985

Vol. 2, No. 6

\$1.60

COMPUTER-CONTROLLED



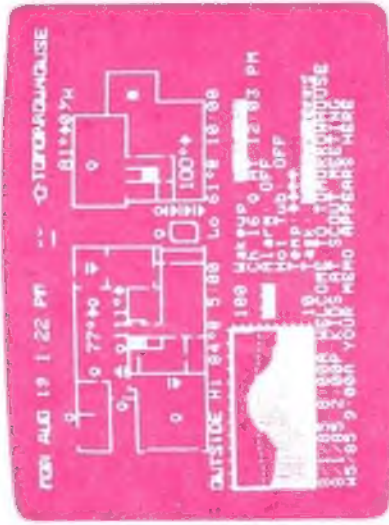
HOME

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"Welcome home,

Mr. Henderson. After I woke you this morning with a hot cup of coffee, I watered the lawn and the garden. You know, it hasn't rained in 27 days. When it warmed up this morning I closed the drapes to keep the house cool before turning on the air conditioning. In addition to keeping the house comfortable, I've saved 25% on your utility bill this month compared to the same period last year. The hot tub's ready for you at exactly the right temperature. I turned on the roast at 5:00 so it should be done by the time you finish your Jacuzzi. Mrs. Henderson left several messages for you on my screen. The kids are at a Scout meeting tonight. The only person that came by today was the mailman at 1:45 PM and I just turned on the houselights because I sensed your approaching footsteps..."



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OTTAWA HOME COMPUTING

OTTAWA HOME COMPUTING is the newsletter of the Ottawa Home Computing Club. Membership is open to all with a genuine interest in personal computing for \$15/year in Canada. Membership includes OTTAWA HOME COMPUTING, which is published 10 times a year. Meetings are usually held on the third Monday of each month, 7:30 P.M., at Charlebois High School, corner of Heron Road and Alta Vista Drive in Ottawa.

When submitting articles please print or type with a fresh ribbon, on 8 1/2 x 11 inch white paper, double-spaced, on one side only. Leave 1 1/2 inch borders on all four sides.

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EDITORIAL

by Bob Mason

Thanks to the people who contributed to this issue, and to any of the issues in the past year. We couldn't have done it without you.

For anybody who makes New Year's resolutions, please don't forget the club. Resolve to become more involved in the club's programmes. Resolve to make your opinion heard, so that people who are putting on

programmes, and putting out newsletters, know what they're doing right, and what they're doing wrong, too!

Resolve to help out with the implementation of any positive ideas you have -- as I've said before, it's a great learning experience doing it.

To all, may I send wishes for a Merry Christmas and a Happy New Year, along with the fervent hope that Santa Claus doesn't get caught in your newly acquired computer-controlled intrusion detector!

AGENDA

December 16 Meeting

7:30 Disk of the Month
Membership Sales
Socialization

8:00 Business Meeting

8:20 Presentation:
COMPUTER-CONTROL
IN THE HOME

9:00 Special Interest Groups

Group Room

Apple & Mac Room 213
Browse through the library,
order disks, discuss applica-
tions, problems, etc.

Commodore and
Disk of the Month Room 219
Same as above, but for Com-
modore. If Paul Anderson
doesn't have the answer for
you, he'll direct you to some-
one who does.

COMAL Room 221
Comal is a programming
language similar to BASIC, but
much faster, more powerful,
and easier to use. Find out
about it.

Forth Room 230
Forth language is shorter
and faster than BASIC. (20 to
600 times faster). Used with
robots, sensors, and many ap-
plications. Much more

Newsletter Room 210
The Newsletter editor and/
or members of the Newsletter
committee will be available
for discussion, suggestions,
submissions, whatever.

SPECIAL INTEREST GROUPS

The following are Special
Interest Groups (SIGs) which

meet monthly and determine
their own format. If you're
interested in developing fur-
ther in one of these fields,
drop in. You're sure to find
someone who shares your
interest.

Computer Graphics Room 223

Beginning Computerists Rm 224

Telecommunications Room 212

Data Base Users Room 227

Machine Language Room 215

Music Room 225

More details and possible
room changes will be indicated
at the meeting.

UPCOMING MEETINGS

In the following list, the
dates of meetings is firm but
the topics are not.

Jan. 20, 1986 Envoy 100

Bell Telephone will be giv-
ing a presentation on some of
the telecommunication facili-
ties available to us, both as
a club and as individuals.
This includes Envoy 100, which
is an E-mail service, and iNET
2000, which allows the sub-
scriber access to a number of
large databases.

Also, and you asked for it,
Relative and Sequential Files
for Commodore. Wes McGugan
will be giving this tutorial
in the 9-10 time slot, and
there will be demonstration
files on the January Disk of
the Month. Plan to attend this
well-planned seminar.

Feb. 17 Word Processing

Some word processing pack-
ages will be discussed in the

meeting, and demonstrators will show these, and other packages in the classrooms afterwards.

Mar. 24 Integrated Software
Same as word processing (above) but covering software which incorporates a combination of facilities (word processing, spreadsheets, graphics, telecommunications, etc.) into one package.

The meetings that involve Word Processing, Integrated Software, and another Games Night (demonstration of Games Software) are dependent on volunteers. We need people to present the software to the meeting, people to demonstrate the software in the classrooms (bring your own equipment), and people to help with the organization of the volunteers (phoning the volunteers, helping with equipment. We've had to move these nights back one month already due to a lack of demonstrators. If you're able to help, please notify Wayne Schaler. Without your help, these nights won't happen.

MINUTES -- NOVEMBER MEETING
by Bob Mason

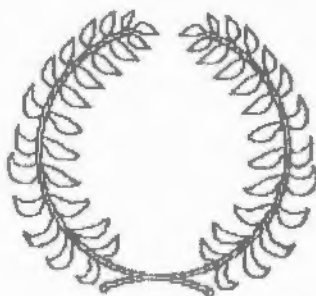
The meeting was held on Monday November 18, at Charlebois High School. The topic of the evening was computer graphics, with a well co-ordinated presentation by Don White and Scotty Adams. This included using a video camera to input images into the computer, which could then be manipulated by the computer, before being output on the printer.

One important announcement, which came out of the executive meeting of November 11 was a decision, by the executive, to start up the bulletin board again. Several of the considerations in the matter were brought out in the question & answer column in last month's newsletter.

The decision taken was to locate the BBS in a member's home (as opposed to in commercially-donated space) and to acquire (as cheaply as possible) the disk drive necessary to run the BBS.

When the board is operational, most likely at a new number, notice will be given here, at the meeting, and on local BBS's.

MERRY
CHRISTMAS
AND A
HAPPY
NEW YEAR
TO ALL
CLUB MEMBERS
AND THEIR
FAMILIES



=====

COMPUTER-CONTROLLED HOME

*by Nelson Groening
and Rubyn Marcusohn*

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The authors are part owners in the Communications, Computers and People Company, which has distribution rights in Eastern Ontario for the TomorrowHouse system. Nelson will be demonstrating this system at the December meeting.

* * * * *

An intelligent home! Is it something that can be seen only in a Jetsons' cartoon? Or perhaps it's only a dream in the minds of the more imaginative. It is, in fact, becoming a reality and already exists in a rudimentary form: from the simple and inexpensive single function control systems to the complex and extremely sophisticated computer-controlled systems.

One of the needs of many people today, people who place a premium on their time, is to have more "quality" time, (the time people spend on what they want to do, not on what they must do). To achieve this a person must find ways to minimize the time that is spent on the more routine and mundane aspects of life. Ideally, and eventually, all these mundane tasks will be done by robots and controlled by computers.

You do not have to look any further than your own home to find repetitious mundane tasks. Tasks as simple as turning lights on and off to the more complex, but just as mundane, task of economically regulating the temperature in

your home. The intelligent home, or the computer-controlled home, is a home equipped with a computer designed to handle these and many, many more tasks. It will have the ability to talk to us and carry out our commands.

The computer's job will be to:

- monitor and control the temperature of our house;
- program our lights and appliances -- anything run by electricity; it will have the coffee ready when we want it and it will prepare the hot tub when we want it ready;
- remind us of important dates and appointments: anniversaries, birthdays, and other special occasions;
- guard and keep our home safe and secure; in case of an intruder it will sound an alarm, turn on the house lights, and call a pre-arranged number. It will respond likewise in the case of fire or any other emergency.

In the not too distant future more of our homes will be equipped with such a computer. In carrying out its tasks, the computer will run our homes efficiently and economically, saving us time and money that would otherwise be wasted.

We are still a long way from the kind of home that the Jetsons have, but we are making inroads toward realizing that lifestyle. Computer hobbyists have begun to task their computers to perform some functions around their homes and there are several companies that have already developed home-control systems and they are beginning to market them to the general public

The choice is from the relatively simple on/dim/off BSR X-10 system developed by BSR of New York, to the highly sophisticated home control system developed by Artra Corporation of Virginia, based on the Texas Instruments personal computer. X-10 Home Controls of Northvale, NJ, has developed PowerHouse, a home control system that interfaces with an Apple or Commodore computer to control up to 256 lights and appliances with up to 128 timer events.

Anova Electronics of San Mateo, CA, has developed a stand-alone home-control system. Its master system combines a telephone centre and appliance control with its home-security setup. If the system senses an intrusion, it sounds an alarm, turns on the lights and phones a prerecorded message for help. During personal emergencies or whenever the smoke detector is activated, the system automatically dials an emergency number. In addition, you can access the system from any remote location using the telephone line.

Gulf & Western's Sensaphone allows you to monitor your home and will handle certain emergency situations such as burglaries and fire while you are away. When it senses that something is wrong, it will automatically dial the proper authorities and inform them of the problem. It will also telephone you, wherever you are, and inform you of the trouble.

Homebrain from Hypertek of Whitehouse, NJ, can be programmed using a home computer and can be used to control up

to 256 wireless modules. It can monitor thermostats, motion detectors, and smoke detectors. If it senses that something is wrong it will activate alarms, turn on emergency lighting, and telephone the authorities.

An article in the April/84 issue of Popular Mechanics stated that, while the existing systems are versatile, none matched the flexibility of the TomorrowHouse system from Compu-Home Systems Inc. of Denver, Colorado.

TomorrowHouse, using logic, will respond appropriately to the information it receives from its sensors; open and close the drapes or turn on and off the lights depending on the sensed light intensity or time, turn the heating or air conditioning down as you leave the home then turn it back up on your return, turn the sprinkler on and off depending on the moisture level in the soil, and activate the burglar alarm by sensing motion or unwanted entry.

Users program TomorrowHouse through a home computer by choosing the desired functions from a screen menu. The program is then down-loaded to the TomorrowHouse microprocessor which stays on-line (with a battery back-up) to monitor and control your home. The home computer is then available for other conventional uses.

The screen information includes a customized floor plan designed for each individual home, a date line, light and appliance symbols designating their status (on/off/dim),

continued on page 13

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ANOTHER LOOK AT PROGRAMMABLE CHARACTERS Part II

by Patrick YANG

This month, we will be looking at a machine language program I've written. The program will, as claimed in last month's issue of the newsletter, copy the original character fonts and make the few changes to get the new memory map and the extra 1K of BASIC workspace on a C-64.

For technical reasons, it is not possible to reprint all of the source code in the newsletter. You will find it (6502 cpu mnemonics of what will be assembled to machine language), the BASIC loader and a machine language copy of it on the disk of the month.

To use the actual program, you don't need to understand machine language, but the source code is a good example of what can be done knowing only a few instructions. I have, for example, tried but not used all of the 6502 instructions in my own applications.

Let's look at the basics of machine language. A 6502 cpu has three (3) registers: A, X and Y, very much like variables, if not for the fact that they can only hold integers between zero and 255. To the surprise of first-time machine language programmers, many things can be done within those limits. In a program written with an assembler, you will usually find, from left to right: the label, the instruction, the argument and comments.

The use of analogies with BASIC is an easy way to approach ML. In a BASIC pro-

gram, you very often have to give a value to a variable (X=3.14159); the same can be done with the three registers A, X and Y. The corresponding instructions are LDA (Load), LDX and LDY (LDY #\$DA). But what happens once all three registers have been filled with values? Well, the instructions STA (Store), STX and STY are similar to a POKE xxxx, Variable. A GOSUB is a JSR \$xxxx, and a RETURN is a RTS. Other instructions you will find in the source are DEY and INC, they will DEcrement and INcrement by one the value held by the register or memory location, but no more than 255 and no less than zero. One plus 255 is zero and not 256, zero minus one is 255 and not -1.

It is difficult to go much further without exceeding the space limitations of the newsletter. There is much to say about machine language, and many books are available on that subject. As an introduction, the author would recommend the reading of series of articles in magazines like COMPUTE and a simple assembler like SUPERMON for the 64.

Now for the program itself, it has been separated in three files. The BASIC loader "newcar" will hold the data for the new characters you'll probably want to create. Simply load and run. The "newcar" file is the object code or the machine language code that will do the copying. The loader will use it, but there is nothing there for the reader. The third one "newcar source" is a file that can be loaded and listed. It contains the assembler code for the second file, from which much can be learned.

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C64 Game Design
DESIGNING ZAP*LURE (II)
a machine language game

Fourteenth of a series
by John Batchelor

ZAP*LURE should be on this month's C64 disk. I find it quite addictive since it plays so quickly. Although there are 20 levels of difficulty, I've never made it past five. In fact, the game winning message only displays up to nine wins properly. Let me know what happens at level ten and I'll know that you are a whiz joystick jockey or that you can decipher machine code!

ZAP*LURE provides a good opportunity to respond to a reader question on how to use sprites that you create with a sprite designer program. The reader apparently could make good sprites but didn't know how to get them to appear in another program. I use the Commodore Sprite Designer that was on the 1541 demo disks. The key thing to understand is memory layout. The C64's video chip usually looks at the first 16K of memory for what to put on the display. For example, usually it looks at \$0400 to \$07F7 for what characters to put on the screen.

The video chip also normally can show up to eight sprites. Each sprite is a pattern of ones and zeros in a 24 by 21 matrix. This pattern is packed into 63 consecutive memory locations or bytes. If you leave one byte as a separator, there is room for 256 sprite definitions in the 16K of memory available to the video chip (16 * 1024 / 64 =

256). Each of these 256 potential sprite locations is called a page. In your sprite designer program there will be an indicator of which page (0 to 255) you are working on. Usually the program will limit you to 128 to 255 because it needs lower memory for itself..

Some sprite editors allow you to turn sprite definitions into Basic DATA statements. You can then READ and POKE these numbers into the pages you want to use. For example, to fill up page 50 you would READ the DATA statements and POKE the 63 values to 3200 (50 * 64) to 3263. Or you can take these bit patterns and move them around with a machine language monitor. Just exit the sprite editor and enter your monitor. Your sprites will be right where you left them.

In ZAP*LURE, I designed the sprites in pages 250 to 255 but moved them down to 48 to 53. This was just after the end of my BASIC program which displays the title and instructions. Of course, it's not enough just to put the sprite patterns into memory. You have to tell the video chip where to find them. If your screen is in the normal location (1024 or \$0400), then locations 2040 to 2047 (\$07FB to \$07FF) must contain the page numbers for each of the eight sprites. In ZAP*LURE, sprite 0, the hero, is at page 49 so that number must be in byte 2040.

You also need to tell the video chip what colour(s) the sprite will be and how big and where on the screen. You need to poke various values to locations 53248 to 53294 (\$D000

to \$D02E). See the User's Guide or Reference Manual for details and examples. So there are the two principal steps: get the pattern into the right place in memory, and give the video chip the information it needs to find the pattern and display it.

In ZAF*LURE, the sprite patterns are loaded off the disk right into their spots in pages 48 to 53 because I attached them to the end of the BASIC code (and then added the machine code to that). The pointers, sizes, locations and colours are initialized by the machine language code every time the game is reset by a win or a "play again?". This initialization is one module

of the program. The others do such things as move the beer can, move the hero, update the table of his recent locations, move the gnomes by copying the hero's move after a shrinking delay, checking for collisions and displaying the winning and losing messages. The sound is changed during the hero's move according to the joystick reading.

We're running out of space this month but I'll reveal one little gimmick. The sprites in ZAF*LURE have flashing eyes and pants. This is a snap. All you do is increment one of the sprite multicolours (\$D026) every time through the basic cycle of the game.

=====

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BY PHONE

INTERNATIONAL SOCCER

a game review
by Jim Sutton

With Canada's team recently qualifying for the World Cup Soccer Tournament, I thought it timely to offer some thoughts on Commodore's International Soccer. My version is on cartridge which, I suppose, offers advantages and disadvantages; I like the almost instantaneous start-up which provides a nice contrast to the 1541 drive.

Initial options are quite straight forward. You can choose to play against a friend or the computer; you can choose team colors; and when playing against the computer, you can choose a skill level from 1 to 9.

In general, the rules of soccer and gravity apply. There is no referee so fouls and off-sides become irrelevant, but the rest of the game plays along fairly smoothly. Out of bounds throws, goal kicks, and corner kicks are handled in familiar fashion. Dribbling is accomplished by moving the player with the ball; a longer kick to pass or shoot is performed by pressing the firebutton and moving the joystick in the desired direction. There are two halves of 200 seconds; the time is displayed in the upper portion of the screen. Limitations of screen size are dealt with by horizontal scrolling; we see only 25% of the length of the screen at any given time.

To say this game is simple is not necessarily to call it easy. It makes the sometimes bewildering attempt to handle a game in which there are 7 players on each team (6 running players and a goal

keeper) with a single joystick on each side to control the action. To do this, the computer designates a player on each side (by changing the colour slightly) who is controlled; the rest run patterns somewhat influenced by the movement of the ball. Usually the player designated is the one closest to the ball but that is not always the case on defense, a minor flaw, but one which can provide some moments of frustration. An offensive pass can also go astray if the intended receiver suddenly shifts his pattern leaving the ball to go out of bounds or into the possession of a waiting defensive player (just like the real thing).

The goal keeper's movements are controlled by the firebutton. He remains stationary in front of his net, and will jump or dive in the direction of the ball on command. This, of course, leaves him particularly vulnerable to a false shot or rebound since he must get up and reposition himself (done automatically). The appropriately skillful or lucky offensive manoeuvre can result in a shot on an empty net.

As with any game, the bottom line is how well it plays. I think the reaction of a friend who is not particularly enchanted by computers (yet) tells the story. After our second game, his enthusiasm was approaching warp drive as was his appreciation of the blend of machine and imagination.

The choice of skill level makes this game accessible to fairly young children as well as providing some challenge for the more experienced. It doesn't take long to play but I'll bet you won't play just once. ***

GAMES SURVEY

by Bob Mason

The results of the "games survey" provide an interesting contrast with the results of last year.

Last year 116 ballots chose 60 "best", and 121 "worst" games. This year there were only 27 ballots completed, choosing 45 "best", and 25 "worst" games.

Let me make a stab at a few amateur sociological observations, based on these simple statistics. First, the significantly smaller overall response, 27 versus 116, despite the fact that there were roughly the same number of people at each meeting. This seems to indicate a lessening interest in games; many at the recent meeting had little interest, or had gone past games; or perhaps they used games so little, they had no opinion on various games; or perhaps they were just bored with questionnaires.

Something else that would back that up is that most of the games mentioned are games that have been available for close to two years now. Very few of the newer games were mentioned at all, unless, of course, there are just fewer new games being developed.

The second observation is that there was a larger number of different titles, per ballot, this time as opposed to last. This could possibly be a function of numerical distribution, but I think the more likely explanation is that the broad range of games available

is beginning to match the broad range of people's interests.

The third observation has to do with the "worst" games selected: there weren't near so many games mentioned as last year, but there were many categorical comments (I don't like 'space invader' games, or 'adventure' games, or 'hand-eye co-ordination' games). I think the people who last year were trying anything this year have learned what they like and don't like, and are not buying the type of game they now know they don't like.

Anyway, the "best" games mentioned most often, in order:

Jumpman
Flight Simulator
Gateway to Apshai
One on One Basketball
Pitstop II
F15 Strike Eagle
Bruce Lee
Impossible Mission

The only "worst" games receiving multiple mentions were Pacman and Spelunker,

GOT SOMETHING
TO SAY?

WRITE FOR THE
NEWSLETTER!

COMPUTER CONTROLLED HOME
continued from page 7

monitored temperatures, the extreme limits (high/low) of a temperature sensor, a graphic display of primary and secondary temperature sensors, indication of heating or cooling cycle, wake up alarm, status of last AC change, alarm status, hot tub status, temperature status, and the task being performed. From the Screen you can set up TomorrowHouse, set the temperature profiles, or look at your transactions.

These systems are still not the Jensons' system that will do everything, including taking the kids to school and the dog out for a walk, but they are promising step towards achieving that dream.

CLASSIFIED

FOR SALE: Commodore 1526 printer, mint condition, extra ribbon, original manual, cables, carton. \$225. Call 232-7988 evenings and weekends.

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* * * * *

C-64 DISK OF THE MONTH

The C-64 Disk of the Month is carried at the stores listed below. It sells for \$4.50 and is available two days after each meeting.

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MR DISKETTE	119 O'Connor Street	232-5203
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